

104th AMS Annual Meeting
Session 13B.2 Feb/1/2024

The Satellite Needs Working Group: Frequent Delivery of Interdisciplinary NASA Satellite Data Products



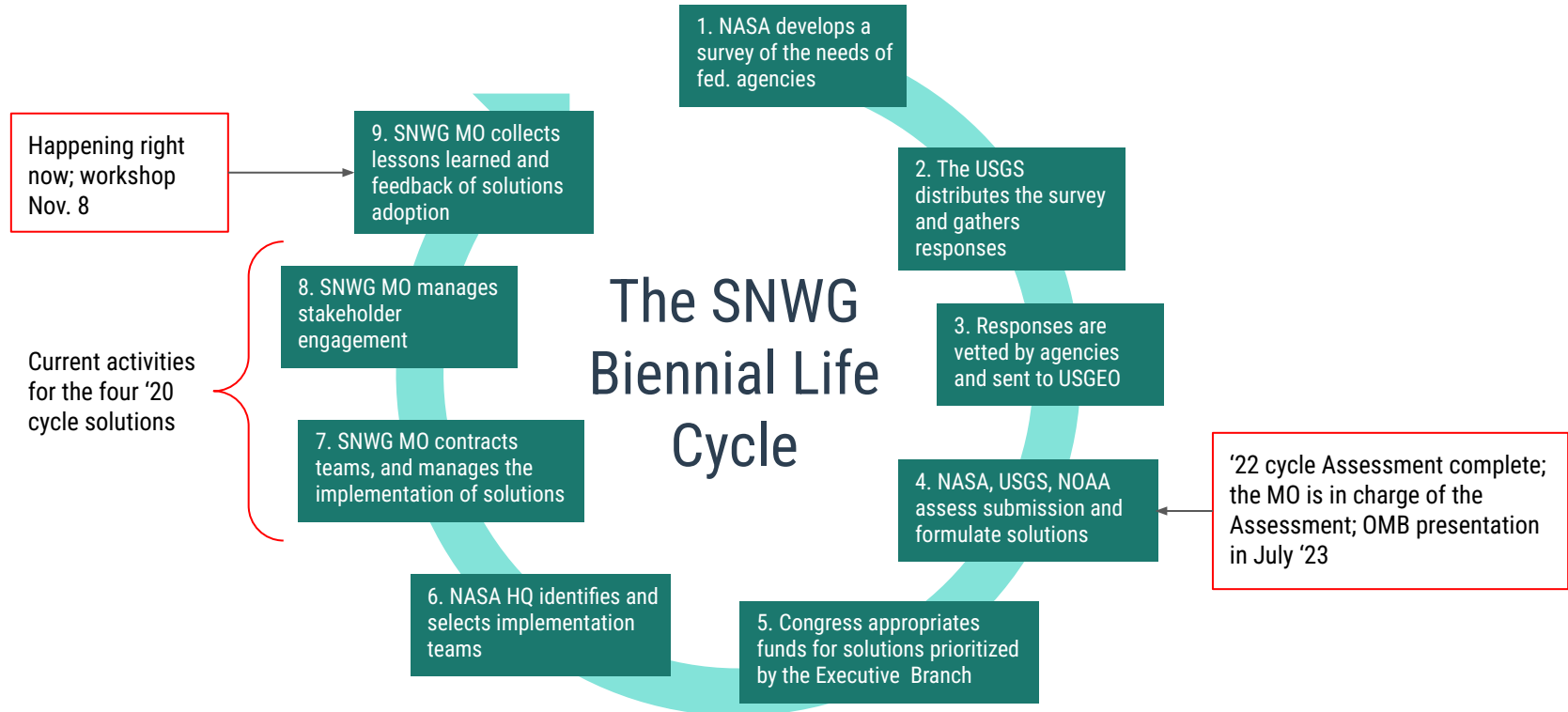
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Satellite Needs Working Group (SNWG) Management Office

The SNWG address Earth observation **needs** of Federal agencies by proposing a set **solutions** for implementation. The SNWG Management Office at IMPACT coordinates NASA's engagement in simultaneous SNWG cycles. The first SNWG cycle began in 2016.



SNWG Solution Highlights

2016 cycle: broader access to Planet data

Numerous agencies requested broader access to high-resolution Planet data, which is now available through NASA's CSDA program

2016 cycle: A Discovery Catalog of NASA Airborne and Field Campaigns (CASEI)

CASEI facilitates quick access to detailed information about NASA's airborne and field investigations along with links to associated data products

2018 cycle: Observational Products for End-Users from Remote Sensing Analysis (OPERA)

(1) Global Surface Water Extent, (2) Global Land Surface Disturbance and Change Detection, and (3) Land Surface Deformation for North America.

2018 cycle ICESat-2 quick-look products

Agencies requested low latency data from ICESat-2; the quick-looks are provided within 3 days of satellite acquisition in comparison to an average latency of 45 days for the standard dataset

2016 cycle: Harmonized Landsat Sentinel-2 (HLS)

Data available from 2013 – present

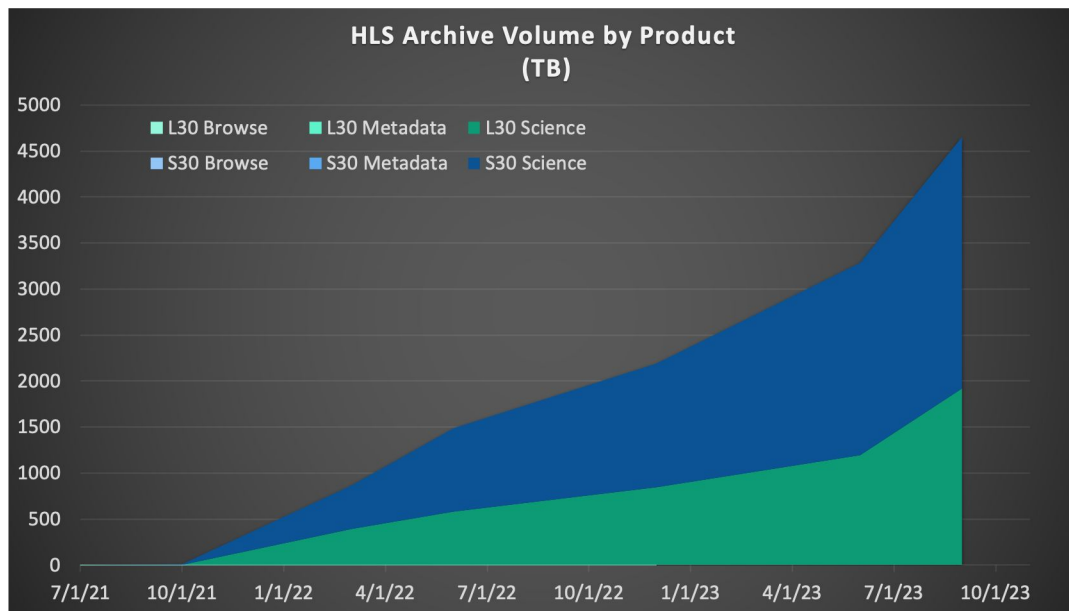
Output as cloud-optimized GeoTIFFs

Increased temporal resolution

Landsat @ 30 m / 16 days
+ Sentinel-2 @ 10, 20, 60 m / 10 days
= HLS @ **30 m / 2-3 days**

Substantial impact

- Harmonized Landsat Sentinel-2 gives almost 10,000 results in Google Scholar
- Around 5 PB of HLS data transferred to users
- Currently being uploaded to Google Earth Engine (per user request)



Status of SNWG 2020 Solutions

TEMPO/GOES near real-time and enhanced products

Implementation team identified (NOAA, Smithsonian/Harvard), proposal in progress; small and well-organized group of stakeholders; we'll tap into current engagement activities.

HLS vegetation indices

The HLS data production team (GFSC and MSFC) are about to submit a proposal; a more generic solution with stakeholders across a wide range of agencies.

Merged GNSS-RO/atmospheric sounder measurements for planetary boundary layer products

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Air quality forecasts and distributed Pandora sensors

A slightly different solution that is based on both instrument measurements and science products. Implementation team identified (MSFC, GSFC, and SciGlob LLC); we'll meet with them Sep 21.

SNWG 2022 Solutions (Pending budget appropriations!)

#1 Vertical Land Motion Product. Leverages SNWG-2018 OPERA solution; tracks magnitude of vertical land surface motion using Sentinel-1 and NISAR (April 2024) data; annual, monthly.

#2 Low-Latency Harmonized Landsat Sentinel-2 (HLS). Leverages SNWG-2016 HLS solution; aims to achieve 6-hour latency.

#3 TEMPO Near Real-Time SO₂ and Enhanced Products. Complements the SNWG-2020 TEMPO solution with hourly SO₂ concentration. In addition, non-NRT TEMPO-based trace gas products.

#4 ARSET Remote Sensing Training. Targeted training efforts for specific applications and agencies.

#5 Multi-Sensor Ocean Surface Winds Product. High temporal resolution (6 h) and gridded wind-speed data by combining data from a wide range of satellite missions.

#6 Harmful Algal Bloom (HAB) Hotspot Product. An algal bloom advisory system based on multiple ocean color sensors; builds on the current NASA CyAN effort.

Learn more about SNWG!

**Stakeholder
Engagement
Program**



**SNWG
solutions page
on Earthdata**



**SNWG official
website from
USGS**

